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ABSTRACT

This teaching guide suggests practical ideas for encouraging psychomotoric talent in preschool children. It is part of a series of similar guides developed by the RAPYHT Project (Retrieval and Acceleration of Promising Young Handicapped and Talented) for educating young gifted/talented handicapped children and gifted children with no handicaps. An initial list of characteristics which indicate exceptional psychomotoric ability in preschoolers is followed by suggestions to stimulate and encourage the psychomotorically talented child. A list of recommended types of classroom equipment and their uses is included. Descriptions of classroom activities comprise the largest section of the guide. Because basic motor skills like walking, running, jumping, climbing, hopping, skipping, and throwing are comprised of more fundamental elements, the suggested activities are classified under 6 fundamental motor elements: dynamic balance, rhythmic locomotion, gross eye-hand coordination, fine eye-hand coordination, agility, and strength. An annotated list of resources is provided. (CM)

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Nurturing Psychomotor Talent In Early Childhood

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RAPYHT: A Model Program for Retrieval and Acceleration of Promising Young Handicapped and Talented

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Cynthia Mohrman is responsible for the art work and cover design which adds reatly to the appearance of the manual.

It is our hope that the suggestions in this manual will help teachers more effectively nurture talent among their charges and in addition, will motivate them to develop other activities for fostering talent.

Merle B. Karnes, Director, RAPYHT Project
Suzanne Anderson, Teacher
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FOREWORD

In the Fall of 1975 the Institute for Child Behavior and Development at the University of Illinois received a grant from the Federal Bureau of Education for the Handicapped (BEH) to develop and demonstrate a model program for the "Retrieval and Acceleration of Promising Young Handicapped and Talented" (RAPYHT). Children from three to five years of age were included in the project, which has completed the last year of a three-year demonstration cycle and is entering into the first year of outreach funding.

The principle goal of this project has been to develop and demonstrate an approach for educating young gifted talented handicapped children who are enrolled in programs that also serve gifted children with no handicaps, average children with no handicaps and multi-handicapped children who are of higher but not gifted ability. Since there are relatively small numbers of gifted handicapped children in any population, the approach has been to educate them in the mainstream, but, at the same time, provide them with special programming to meet the unique needs associated with giftedness and talent.

A major outcome of this three-year demonstration project has been the completion of a set of printed materials designed to aid classroom teachers and parents who desire to identify and encourage the development of the gifts and talents of young children, including those who are handicapped. This set of materials includes guides for screening, assessing and programming for children in the areas of intellectual, academic (reading, math, science), creative, leadership, visual and performing arts (art and music), and psychomotor talent. These materials are applicable for use with young gifted/talented children as well as those who are gifted/talented with handicaps. In fact, every child has a measure of talent which may go underdeveloped unless identified and nurtured. Therefore, we are convinced that careful observation and programming in talent areas is important for all children.

We are also committed to the premise that the earlier we identify and program for talents the greater the chances that the child will fully develop his true potential. Nationwide, there have been relatively few efforts devoted to identifying and programming for young gifted/talented and even less for the gifted/talented handicapped. Hopefully, the products developed by the RAPYHT Project will create more awareness of the need to identify and program for this neglected segment of our population.

Merle B. Karnes, Ed.D.
Director of RAPYHT Project

PSYCHOMOTORIC TALENT IN THE PRESCHOOL YEARS

Young children enjoy movement and spend a great deal of playtime practicing basic motor skills such as walking, running, jumping, climbing, hopping, skipping, and throwing. Although most children master these basics by the age of five or six, they perform these movements with varying degrees of skill. Research shows that a preschool child who performs motor skills very proficiently has an easier time learning more refined and complicated movements later in life (Lauther, 1968; The Elementary School Physical Education Council, 1977). According to Singer (1971) a major factor in adult sport success is a high mastery level of basic motor skills in early childhood.

Although inherited physical make-up is a major factor contributing to motor excellence in children, other factors are equally important including a wide variety of motor experiences and practice (Lauther, 1968; Singer, 1971; Seefeldt, 1976). Therefore, it is very important to provide opportunities for a young child to develop and refine motor skills. It is not necessary to set up structured sessions to teach a preschool child specific motor skills. Rather, a teacher should allow at least one half hour daily for the child to play in a motor area, explore apparatus, and discover new ways to move and use his/her body. The teacher should spend this time challenging the child to attempt new skills and encouraging him/her to solve motor problems (The Elementary School Physical Education Council, 1977).

There are several levels of motor performance ranging from simple to very complex. In her book Taxonomy of the Psychomotoric Domain, Anita Harrow describes the following four progressive stages.

1. Skilled Movements: In this stage the child is able to perform a basic motor skill such as running, hopping, or jumping.
2. Simple Adaptive Skills: In this stage the child refines a "skilled movement" and adapts it to a new situation such as jumping on a trampoline or combining one or more skilled movements in a sequence such as running and sliding.
3. Compound Adaptive Skills: In this stage the child controls his/her body while using a tool, such as jumping rope or jumping up to put a ball through a hoop.
4. Complex Adaptive Skills: In this stage, the child must judge both the space and the time needed to perform a skill such as jumping over a rope that is being turned by two other people or turning in a complete circle in the air while jumping on a trampoline.

By challenging the child to practice and refine skills as well as explore and create movement combinations, the teacher can encourage him/her to develop increasingly complex motor abilities.

COMMON CHARACTERISTICS OF CHILDREN WITH PSYCHOMOTORIC TALENT

The following is a list of characteristics which may indicate that a child has exceptional psychomotoric ability.

1. The child has advanced gross motor skills. She/he can run faster, jump higher, and climb with more skill than other children the same age. The child performs many large motor movements with ease and confidence.

2. The child is noisy, noticeable, and enjoys performing for others. She/he participates eagerly in active classroom games, such as rhythm band parades and imitation games (Simon Says, etc.). The child is often involved in role playing with other children and also enjoys performing in skits and other dramatic activities.

3. The child shows a strong interest in fine motor activities, such as cutting, drawing, painting, and working with clay.

4. The child has advanced fine eye-hand coordination. For example, she/he may be able to thread needles, tie shoe laces, trace forms with a writing tool or copy letters or numerals.

5. The child has a wide range of movements including fast, slow, gentle and strong. The child has good control over his/her body and moves at different speeds and strengths with the same amount of skill.

6. The child has exceptional balance. For example, she/he may walk easily across a balance beam (4" wide) or land on his/her feet from

a long broad jump or use a combination of movements while jumping on a trampoline.

7. The child is very agile. She/he can bend easily and change directions smoothly. The child may perform skillfully on monkey bars or jungle gyms and do tumbling stunts well.

8. The child is strong. She/he may be able to carry heavy loads, open tightly closed jars or move large objects.

9. The child uses basic motor skills and combinations of motor skills in goal-directed activities or games. For example, when role playing a circus acrobat, she/he might walk on a ledge, jump off, turn a somersault and leap to his/her feet.

GENERAL METHODS TO STIMULATE PSYCHOMOTORIC TALENT

Motor activities developed for the talented preschool child should emphasize exploration, discovery and joy in acquiring skills rather than programming for specific skills. The teacher should be aware of the child's abilities, should respond to and extend the child's interests in a variety of motor experiences and should teach the child to create his/her own movement combinations and patterns. The following are suggestions to stimulate and encourage the psychomotorically talented child:

1. Give the child plenty of time and encouragement to learn and refine new motor skills. Allow fifteen minutes to a half hour daily for the child to freely engage in large motor activities by himself/herself or with other children. Once a child has acquired a motor skill, she/he will probably repeat it again and again in order to practice and perfect the movement. Encourage the child with specific praise: "I have never seen you jump from the high step before: That's terrific. I saw you walk backwards on the balance beam. You looked like a tight rope walker. You learned how to skip! Let me see you do it again."

2. Once the child has mastered a skill, encourage him/her to use it in combination with other skills. For example, if the child has learned how to jump from a high platform, encourage him/her to practice landing on both feet while maintaining his/her balance. Then ask what else she/he could do after landing. "Can you make a complete turn from that crouching position and, then, run to that tree?" Point out that

she/he combined four movements (jumping, landing, turning and running) into a pattern.

Arrange obstacle courses which require the child to perform various motor skills in succession, such as jumping over a pole, crawling under a chair backwards and, then, hopping along a line on the floor.

3. Provide opportunities for pantomiming or dance movement. Encourage the child to combine several "skilled" movements into a pattern. For example, the child might pantomime a baseball player who selects a bat, walks up to the plate, crouches, swings, hits, runs and slides into base.

4. Encourage the child to elaborate and extend his/her role playing activities through movement combinations. For example, when a child pretends she/he is one of the Superheroes (Batman, Wonder Woman, etc.) ask how this superhero would rescue a friend from the top of a sky-scraper, from an island surrounded by wire and patrolled by dogs, from a submarine, etc. Make specific comments on the role playing as well as the combination of movements.

5. Encourage the child to show others how to perform tumbling stunts, such as somersaults and acrobatics (hanging by the knees on monkey bars, walking across a balance beam, etc.). By demonstrating techniques to others, the child will become more aware of how she/he controls his/her own body and performs the movements.

6. Provide many types of large motor equipment. (See the suggested equipment list.) Provide a variety of surfaces for motor activities, such as ground level, inclined (slides and planks), elevated (platforms and climbing apparatus), depressed (sand pits), smooth (concrete), rough (graveled areas), stable, and unstable (small trampolines, seesaws, vestibular boards).

7. Change the large motor area periodically so that it remains stimulating. Add or remove equipment from time to time or change the location of movable apparatus. Make an obstacle course, or ask the child to create one or help you create one.

8. Provide opportunities for the child to share and take turns in game situations. It is important for him/her to learn how to win and lose games. One familiar game which requires winning and losing is Musical Chairs. Other activities are races, Pin-the Tail-on-the-Donkey, and Red-light, Green-light.

9. Stock the classroom with equipment and materials for a variety of fine motor activities, such as cutting, drawing, painting and sewing. Help the child learn how to use various fine motor tools and allow plenty of time for exploration and practice.

Equipment

Equipment should be selected according to the needs and interests of the children. A list of recommended equipment and some related uses follow:

1. Balance Boards -- on which to practice balance.

2. Balls of several sizes and varied materials to throw, catch, kick, and bat (Use 6"-8" diameter balls in throwing and catching activities. Preschoolers have small hands and cannot catch smaller balls easily.).

3. Barrels -- to crawl through.

4. Bars -- (at several heights) to hang from and swing on.

5. Bats -- badminton rackets, paddles, mallets, and baseball bats. (These should be light enough for a preschool child to handle and large enough to provide the child with a successful hitting experience.)

6. Bean Bags -- for tossing at targets.

7. Boxes -- (solid wooden boxes and cardboard boxes) to crawl in and jump off of.

8. Cargo Nets -- for climbing.

9. Climbing Structures -- constructed of sturdy materials such as metal tubing ("Jungle Gyms") or solid wooden platforms at different heights.

10. Ladders -- used at various angles, horizontally, or vertically, with hooks on the end to fix in a secure position.

11. Mats -- for tumbling activities.

12. Padded Sawhorses -- for riding, climbing and vaulting.

13. Record Player -- to provide music for creative and rhythmic movements.

14. Rhythm Instruments -- (rattles, triangles, jingle bells, wooden blocks, wooden sticks and a sturdy drum) to accompany marching, skipping, galloping and other rhythmic activities.

15. Ropes -- short ropes held horizontally or turned to jump over; long heavy ropes suspended from a high spot to swing on.

16. Sand area -- for broad jumping.

17. Spools -- (large wooden cable spools) for climbing, jumping, and rolling activities.

18. Slides and Swings.

19. Steps -- as props or equipment.

20. Tires -- for rolling, jumping on, and for making obstacle courses.

21. Tunnels -- (concrete, wood or wire covered by cloth) to crawl through.

22. Wagons, Sleds, Tricyles and Wheelbarrows -- to pull, push, ride or transport children and other cargo.

GOAL AREAS AND ACTIVITIES

Basic motor skills such as walking, running, jumping, climbing, hopping, skipping, and throwing are comprised of even more fundamental elements. The suggested activities which follow are classified under six fundamental motor elements: 1) dynamic balance, 2) rhythmic locomotion, 3) gross eye-hand coordination, 4) fine eye-hand coordination, 5) agility, and 6) strength.

A. DYNAMIC BALANCE--balancing while moving in activities

1. Suggest that the child role play a circus acrobat using the balance beam as a high wire. Challenge him/her to walk backwards, make a half turn, make a whole turn, squat, stand on one foot, jump up and land on the beam. Have the child carry something as he/she walks across the beam. Place an object on the beam and have the child step over it.

2. Provide a small trampoline or make one by stretching laced canvas around a large inner tube or tire. Encourage the child to create different ways of jumping on the trampoline. She/he might jump from a standing to a kneeling or sitting position, or turn around while jumping, etc. Have the child jump with his/her arms in various positions: at his/her sides, up in the air, stretched out sideways, forward, or to the back. Have the child jump while she/he is holding something large, but lightweight, over his/her head (such as a hula hoop or a beach ball). Place a small object on the trampoline and tell the child to jump without bouncing the object off the trampoline. Then tell the child to jump

hard, so that the object bounces off in one or two jumps. Encourage the child to create his/her own stunts or movement combinations on the trampoline.

3. Provide a pair of roller skates. Have the child skate on grass until she/he gains adequate control to use a concrete or asphalt surface. After the child has learned to skate, challenge him/her to skate around obstacles, squat slightly while rolling, roll down a slight incline, etc.

4. Lay several tires end-to-end. Challenge the child to move as many ways as she/he can from tire to tire. She/he might jump from tire to tire, jump from center to center, jump from front to back of each tire, walk from tire to tire by stepping with one foot inside a tire and the other outside.

5. Challenge the child to make and walk around on coffee can stilts. Help the child make the stilts by punching two holes on opposite sides of a coffee can near the solid base of the can. See diagram.

Cut a 4' - 5' length of heavy duty string; thread it through both holes in the coffee can and tie the ends in a knot. Repeat the process for a second can. When the stilts are finished, have the child step on the solid base of each can. Pull the strings taut as she/he lifts each foot alternately to walk. Challenge the child to walk on level and inclined planes, as well as smooth and rough surfaces such as concrete,

asphalt, grass, or pebbles. The child may also enjoy walking across a board placed over a stream or a shallow depression.

6. Place small wooden blocks of various shapes randomly on a carpeted area. Challenge the child to walk on the blocks without touching the floor. Spread the blocks far apart to make the activity more difficult. Vary this activity by having the child stand with each foot on a block. Tell him/her to move about the room, keeping his/her feet on the blocks.

B. RHYTHMIC LOCOMOTION--moving in a coordinated, rhythmic way

1. Play recorded music with a quick tempo. Tell the child to show you how the music sounds by using only one part of his body (arm, leg, head, eyes, mouth, shoulders, etc.). Have him move that body part to the music for several seconds. Then continue to play the music, and tell the child to add another body part: "Now move your (head) and your (thumbs)." Continue the activity until the child is moving several body parts at once.

2. Tell the child to walk around the room as slowly as possible using very big steps. You may want to demonstrate this movement. As the child moves, direct and encourage him/her. "Move slower, slower, like a giant turtle. You are moving so slowly. You're almost stopping." Then tell the child to move fast. If the child doesn't discover that she/he must take smaller steps in order to move fast, point this out to him/her. Continue to encourage the child to move faster and faster. Gradually,

have the child slow down the movement until she/he is again stepping very slowly. Repeat the activity using the following variations:

- Have the child use other large rhythmic movements, such as twisting from side to side at the waist, moving his arms in large circles, "bicycling" while lying on his back, marching.
- Use a drum, triangle or other rhythm instrument rather than verbal cues to designate the tempo of the movement.
- Play marching music on a record player. Switch the speed on the record player (33 1/3, 45 or 78 rpm's) to designate the tempo of the movement.

3. Organize races with several children that require them to use rhythmic movements, such as galloping, skipping, walking on their hands and feet with knees and elbows straight, and jumping forward.

4. Challenge several children to skip and/or gallop for a period of time. Ask them to make a circle. Explain that they should all skip (or gallop) in the same direction, and that when a child can no longer continue, she/he should sit in the middle of the circle. Have the children continue the activity until only one child remains skipping (galloping).

5. Play some music on the piano or a record player. Have the child rock his/her body to the music in a sitting position. Then say, "Show me a different way to rock your body while you are sitting." Challenge him/her to think of many ways to rock his/her body while sitting. She/he might rock forward and backward, sideways, with knees bent to his/her

chest, with knees straight, with hands on the floor, with arms outstretched. If the child is changing only one body part, suggest others: "How else can you move your head? What about your elbows? How could you change your arms?" Than have the child repeate the activity on his/her stomach. This activity should stress exploration and discovery.

C. GROSS EYE-HAND COORDINATION - coordinating the movement of the hand in response to a stationary or moving object.

1. Initiate the game of Horse-shoe. Cut two 6" diameter rings from heavy cardboard. Glue a 12" length of wooden dowel rod to a wooden base (approximately 6" x 6" x 1 3/4"). Designate a tossing line on which the player must stand. Place the rod base 5'-6' away from the tossing line. Have each player toss two rings toward the rod target. A point is scored if a cardboard ring lands on the rod target. Children may compete to see who can toss the most "ringers."
   - Make the game more difficult by increasing the distance of the rod target from the tossing line.

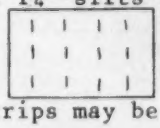
2. Initiate the game of "Sock the Ball." Suspend a whiffle ball with heavy string at shoulder height to the child. Tell him/her to strike the stationary ball with a baseball bat or a tennis racket. To increase the difficulty of the activity swing the ball on the string, and challenge the child to strike the ball as it swings.

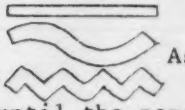
3. Initiate a simple version of baseball with three children. Pitch a whiffle ball or soft ball to a batter. Have another child stand 4'

behind the batter to catch the balls and throw them back to the pitcher. At least one other child should stand in the "outfield" to retrieve batted balls and throw them to the pitcher. A batter may score a point either by hitting the ball, or by hitting the ball and running bases as in conventional baseball.

4. Bend a coat hanger into a circular hoop and hang it on a wall approximately 4' - 5' above the floor. Give the player a ball, and challenge him/her to shoot it into the hoop. The child may score a point for every successful basket.
   - As a variation to this activity designate a spot on which the shooter should stand.
   - For another variation challenge several players to take one step away from the hoop each time they make a basket. The winner is the player who is able to shoot a basket from the greatest distance.
   - As the child develops skill in tossing a ball into the hoop, encourage him/her to combine other skilled movements (running, jumping, pivoting, dribbling, etc.) with "making baskets."

D. FINE EYE-HAND COORDINATION --coordinating fine movements of the hand and fingers in activities

1. Paper Weaving - Cut a series of 1½" slits in a piece of construction paper approximately 8" x 11".  Cut 1" x 11" paper strips in a variety of colors. The strips may be straight, wavy, or pointed.



Ask the child to weave the strips in and out of the slits until the paper is filled. Glue the ends of the strips to the paper.

2. Carve Animals - Provide the child with a bar of ivory soap. Have him/her use a table knife to carve out animals, cars, creative designs, etc. A soft molding plaster may also be used for a carving activity. Mix the plaster according to directions, pour it into an empty milk carton and let it harden. Remove the milk carton and have the child carve the plaster block into objects and/or animals.

3. Provide the child with tempera paints, water colors and other types of art materials. Painting, drawing, cutting and other art activities are excellent ways for the child to refine fine eye-hand coordination. (See the art talent guide for specific suggestions.)

4. Children with motoric talent have the strength and dexterity necessary to construct objects with woodworking materials. Provide the following materials:

   - Workbench (This may be a commercial child-size workbench or an old table. The workbench will get nicks from saws, dents from hammers, holes from nails and scrapes from sandpaper, so provide a strong and old, battered table.)
   - Heavy cardboard and balsa or other types of lightweight wood. (Preschoolers do not have the strength and skill to saw and hammer into hard woods.)
   - Hammers - claw hammers
   - Nails - assorted sizes
   - Vice (A vice will hold the cardboard or wood securely while the child saws. Using a vice is a skill in itself. The child must hold the wood in place while she/he tightens the vice. This requires coordination and strength.)

- Screw drivers - Phillips and regular
- Screws - assorted sizes
- Saws - hacksaw, keyhole saw
- Sandpaper
- Bottle caps, leather scraps, heavy string and other junk items to use in construction

Emphasize that tools are not weapons or toys. They should only be used at the workbench. To avoid accidents, limit the use of the workbench to two or three children at a time. Demonstrate the following methods of using the materials listed above:

- Hammer a nail into the cardboard or wood.
- Hammer a bottle cap or other piece of junk into a piece of cardboard or wood with a nail.
- Remove a nail with the claw hammer.
- Remove a nail by prying it out with a screwdriver.
- Saw a piece of cardboard or wood. First, secure it with the vice. Then stroke the saw back and forth repeatedly.
- Screw a screw. First make a hole with a hammer and nail. Then remove the nail and use the screwdriver to screw the screw in the hole.
- Rub a rough piece of wood with sandpaper to make it smooth.

When the child has learned how to use these tools, she/he may use them to build such things as toy buildings, furniture, fences, cars, etc. Help the child organize his/her building project. You might use the following procedures to help the child:

- Have the child draw a simple plan for the object she/he wants to build. If the child has limited drawing skills you might

provide him/her with some paper shapes. The child could then arrange the shapes on paper to show his/her plans. (Do not include curved shapes--curves are very difficult to cut out with a saw.) Then look at the plan with the child. Have him/her describe the object and label the parts. Tape the plan to the wall by the workbench, so the child can refer to it as she/he works. Do not insist that the child rigidly follow his/her original plan. The plan is only an aid to help the child organize his/her ideas and to see that wood working has a concrete purpose. Let the child make changes in the plan if she/he wants to do so.

5. The motorically talented child is often quite independent in the self-help area. Encourage the child to help and/or teach classmates how to button, snap, zip, tie, and hook.

E. AGILITY--controlling and manuevering one's body with ease

1. Demonstrate the following gymnastic and tumbling positions and movements on a large floor mat.

Sitting:

Pike	Straddle	Tuck
(touch toes)	(spread legs)	(hug knees)

Standing:

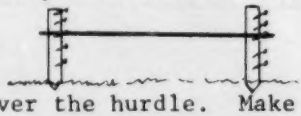
Pike	Straddle	Tuck
(touch toes)	(spread legs)	(squat & hug knees)

- Forward Roll: Place hands flat on the mat approximately 6" - 8" in front of the feet. Tuck the head under as if to touch the chest. Place the shoulders on the mat and roll over. Pull the entire body up to a sitting tuck position (pulling with the head first).
- Log Roll: Lay on the mat with arms over the head. Roll across the mat keeping the body, arms and legs straight.
- Back Arch: Lay down with the back flat on the mat, knees bent and feet flat; put hands flat on the mat above shoulders. Push the body up into an arch with weight on hands and feet.
- Quarter Turn: Jump up in the air, turn 90 degrees and land on feet.
- Half Turn: Jump up in the air, turn 180 degrees and land on feet.

2. Help the child develop combinations of gymnastic skills by challenging him/her to perform several of them in a sequence such as:
   - Forward roll, sitting tuck, sitting straddle
   - Half turn, standing pike, half turn, standing straddle
   - Log roll, sit, sitting pike, sitting straddle
   - Log roll, back arch, sit, sitting pike

3. Challenge the child to move across the room in different ways: "Move across the room with your body stretched out covering a big space. Move across the room with your body curled up. Move across the room backwards (sideways, on your stomach, with your shoulders on the floor, etc.). Now move with heavy steps, light steps, on tip-toe, etc."

4. Play the "statue" game with several children. Hold a child by one hand, swing him/her in a circle, and let go. Tell the child to hold the position she/he stops in. When all the children are in "statue" positions, go from child to child and try to make them move without touching them. You might do a funny movement or say something silly, or pretend you're tickling them. If a child does move, have him/her sit down. Continue until only one child remains standing.

5. Build a high jump with two stakes, a three foot dowel rod, and nails, according to the illustration. 
Have each child run and jump over the hurdle. Make sure that the child runs towards the side without the protruding nails to prevent injuries from the nails, and so that the dowel will fall if the child hits it.

F. STRENGTH--displaying exceptional strength in activities without undue effort

1. Have the child discover different ways to stretch a bicycle inner tube. She/he might stand with both feet on the inner tube and push or pull up with both hands; she/he might pull sideways with his/her hands. If the child is short she/he might use an object or a partner. For example, she/he might place the inner tube around a pole and pull it or have a tug-of-war with a partner.

- As a variation to this activity have three or four children use one inner tube and create ways of stretching it as a group.

2. When you decide to change the furniture layout in the classroom ask the child to help you. She/he can offer his/her opinions regarding the placement of furniture. After an arrangement has been agreed upon, the child can help you carry, push, or pull the various pieces of furniture to the new places.

3. Give the child a variety of materials to develop his/her own playground. Some possible materials are:

   - 1' long telephone pole sections
   - 6' x 4" x 2" wooden planks
   - Wooden cable spools
   - Large oil drums

   Encourage several children to lift and carry the heavy objects to build and arrange their own outdoor play apparatus. Materials that might be used are:

   - Telephone pole sections stood on end vertically, and used as stepping stones
   - A plank placed on top of two pole sections 4' apart, and used as a balance beam
   - A plank placed on an angle from the ground to the top of a cable spool, used as a balance beam, slide, and a climbing structure
   - Oil drums placed horizontally to crawl in or balance on top of
   - Get books from the library which contain photographs or clear illustrations of circuses and race courses that might give children ideas for apparatus to build

encourage the child to use his/her strength by helping others. Tasks such as moving heavy objects, loosening tight lids, removing deeply driven nails, opening a can with a can opener, and pulling heavy loads may be easy for the exceptionally strong child.

ANNOTATED LIST OF RESOURCES

1. Diem, L. Who can ... Illustrating education for movement in the primary grades. Wilhelm, Limpert: Frankfort M., Germany, 1964.

Mrs. Diem's book presents motor skills as a challenge to children. The phrase "Who can ..." introduces each of the twenty illustrated movement activities. Thus, the child is presented with a motor task, but not told exactly how to do it. Rather, she/he performs the task in his/her own way. Also included in the book are simple sketches of people performing various movement activities with descriptions of how they are moving. Although a few of the activities are too advanced for preschool children, the teacher can select the activities that are appropriate for his/her students.

2. The Elementary School Physical Education Council. Echoes of influence for elementary school physical education. Washington, D. C.: American Alliance for Health, Physical Education and Recreation, 1977.

This publication contains a collection of readings on elementary physical education including such topics as curriculum alternatives, perceptual-motor development, physical education for special populations, instructional ideas, playgrounds, sports and competition, and professional preparation. Several articles specifically concern preschool-age children.

3. Gerhardt, L. H. Moving and knowing: The Young child orients himself in space. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972.

This book discusses theories of body movement in human development. Each major theory is discussed through a case study approach. Following each case study is a list of suggested curricula, materials, and activities.

4. Harrow, A. J. A taxonomy of the psychomotor domain: A guide for developing behavioral objectives. New York, New York: David McKay Company, Inc., 1972.

Anita Harrow has written a taxonomy of psychomotoric development. The author offers teachers detailed instructions on how to organize motoric experiences and develop psychomotoric goals for children. The taxonomy is classified under the following headings:

1. Reflex Movement - an unconscious response to a stimulus
2. Basic Fundamental Movement - developed from reflex movements. These include: visual tracking, reaching, grasping, manipulating objects by hand, crawling, creeping, and walking
3. Perceptual Abilities - such as body awareness, visual discrimination, auditory discrimination, tactile discrimination, eye-foot and eye-hand coordination.

5. Lawther, J. D. The learning of physical skills. Englewood Cliffs, New Jersey. Prentice-Hall, Inc., 1968.

Chapter two of this book discusses factors affecting motor performance in early childhood and the effect that early training may have on performance.

6. Miller, P. L. Creative outdoor play areas. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972.

This book encourages teachers to take a fresh look at outdoor play areas for children. The author stresses the importance of providing versatile materials in a setting of natural beauty where children may develop their motor skills as they play creatively. The author discusses the importance of outdoor play and how it relates to childrens' learning. Ms. Miller believes that children should be involved in the planning and development of outdoor play areas.

7. Schurr, E. Movement experiences for children: A humanistic approach to elementary school physical education. Englewood Cliffs: Prentice-Hall, Inc., 1975.

This is a practical resource book for movement educators. The author discusses ways to plan, organize, implement and assess a total motor program. Activities suggested are: dance, games, lead up games to team sports, lead up games to individual sports, and gymnastics. A list of equipment and sources is included.

8. Sinclair, Caroline. Movements of the young child ages two to six. Columbus, Ohio: Charles E. Merrill Publishing Company, 1973.

This book describes motor development in the early years. There are photographs of children performing motor skills as well as seven case studies explaining typical and atypical motor development in children. The author discusses the use of time and space, lists motor equipment with corresponding functions, recommends ways to develop a movement program, and suggests activities for parents to use at home.

9. Singer, R. Motor learning and human performance: An application to physicial education skills. London: The Macmillan Company, 1971.

This very technical book is designed as a textbook for a course in motor learning. The book presents general theories of learning, an analysis of the nervous system, the affects of various teaching methods on motor learning and the sociopsychological factors of motor skill success.

10. Stein, J. Show me what else? Campbell, California: Enrichment Materials, Company, 1973.

This book presents excellent, illustrated ideas for using gross motor equipment such as balance beams, hoops, tires, tumbling mats, and wooden steps. The book also contains plans for homemade equipment. Stein suggests problem solving questions to stimulate the child for each piece of apparatus.